

REMARKS

The rejection of Claims 1-12 under 35 U.S.C. § 103(a) as unpatentable over US 6,299,977 (Takeyama et al) in view of US 4,525,169 (Higuchi et al) and further evidenced by US 4,914,764 (Mast et al), is respectfully traversed.

The present invention relates to a suede artificial leather having, *inter alia*, excellent color fastness to light and color development in a wide variety of colors.

As described in the specification under "Description of the Prior Art," beginning at page 1, line 10, suede artificial leathers comprising super fine fibers and an elastomeric polymer have been conventionally known, and dyes have been conventionally used to color the suede artificial leathers. However, color development and color fastness have been problematical, as have been the proposed solutions thereto. Applicants describe in the specification at page 6, lines 7-10 that no suede artificial leather having excellent color fastness to light and color development in a wide variety of colors and also excellent in suede feeling, surface touch, and, mechanical properties and various fastness has been industrially provided. The present invention is intended to solve the above-discussed problems of the prior art.

As recited in above-amended Claim 1, the present invention is a suede artificial leather comprising a three-dimensional entangled body comprising a superfine fiber having a fineness of 0.2 dtex or less and an elastomeric polymer A, the suede artificial leather satisfying the following requirements (1) to (4):

(1) a pigment A in an amount of 0 to 8% by mass is embedded in the superfine fiber, wherein the pigment A is at least one pigment selected from the group consisting of an organic pigment having an average particle size of 0.01 to 0.3 μm and carbon black having an average particle size of 0.01 to 0.3 μm ;

(2) a pigment B in an amount of 1 to 20% by mass is embedded in the elastomeric polymer A, the pigment B being at least one pigment selected from the group consisting of an organic pigment having an average particle size of 0.05 to 0.6 μm and carbon black having an average particle size of 0.05 to 0.6 μm , or the pigment B being a pigment particle having an average particle size of 0.05 to 0.6 μm containing an organic pigment;

(3) the ratio of the elastomeric polymer A to the three-dimensional entangled body is 15:85 to 60:40 by mass; and

(4) an average raised nap length of the superfine fiber present on the surface of the suede artificial leather is 10 to 200 μm .

The specification contains comparative data between the presently-claimed invention (Examples 1-11) and suede artificial leathers outside the terms of the present claims (Comparative Examples 1-10). The comparative examples, described in the specification beginning at page 60, line 9, are, for the most part, similar to the presently-claimed invention, but a parameter has been adjusted to be outside the terms of the claims, or, for example, a dye has been used instead of a pigment. In all cases, the comparative examples produced inferior results.

Takeyama et al relates to the appearance and structure of non-woven fabrics suited for forming man made leathers, but is not concerned with any advances in the art of coloring such leathers. Indeed, Takeyama et al discloses that “common processes such as dyeing processing . . . are optionally applied on arbitrary stages” (column 10, lines 60-65 and column 16, lines 45-50) in the manufacturing process of their man made leather. The Examiner relies on Example 2 therein, wherein a nubuck-like man made leather was dyed, as described therein (column 23, line 44 ff). Thus, in Takeyama et al, the man made leather is first made, and then dyed by a customary dyeing process. In such a process, the dyestuff is present only on the surface of the fine fibers and the impregnated elastomer.

In the presently-claimed invention, on the other hand, pigment A, when present, is embedded in the superfine fiber, and pigment B is embedded in the elastomeric polymer A, which embedding is defined in the specification at page 9, line 24 through page 10, line 3 and page 24, lines 17-24. An example of such embedding is described in Example 1, in the specification beginning at page 52, line 9, wherein the superfine fiber-forming composite fibers are produced by spinning a raw material including a mixture of a pigment A and a polymer for forming the superfine fibers, after which a water-dispersed emulsion of a polyurethane, as elastomeric polymer A, containing pigment B was impregnated into the fiber-entangled non-woven fabric.

Thus, aside from the fact that the present invention uses pigments, while Takeyama et al employs conventional dyeing, the distribution of pigments in the present invention is significantly different from the distribution of dyes in Takeyama et al.

Neither Higuchi et al nor Mast et al, alone or in combination, remedy the above-discussed deficiencies of Takeyama et al.

The Examiner relies on Higuchi et al for its disclosure of a coating layer, as well as the use of pigments. However, it is noted that the coating layer constitutes the grain surface which is formed on the fibrous substrate layer comprising ultra fine fibers and elastomer. The grain surface and the fiber surface have different functions and require different properties. Thus, Higuchi et al adds nothing to the inventive concept herein which involves improvement of the fibrous substrate. In addition, Higuchi et al discloses the dyeing of only staple, filament, or fibrous sheet by bath dyeing methods (column 4, line 67 to column 5, line 5), and thus suffers from similar deficiencies as Takeyama et al with regard to a lack of disclosure of embedding the pigments in the fiber and in the elastomeric polymer. Nor would one skilled in the art combine Example 2 of Takeyama et al and Higuchi et al. Since Example 2 of Takeyama et al relates to a nubuck-like leather, such leather has no grain

surface. (Indeed, Takeyama et al distinguishes nubuck-like man made leather from grain type nubuck-like man made leather.) Thus, one skilled in the art would not combine a disclosure of Higuchi et al's coating layer with Takeyama et al's nubuck-like leather having no grain surface.

Mast et al relates to a process for the bath pigmentation of leather and, like Takeyama et al, is drawn to the pigmentation of already-formed leather.

Finally, while the Examiner treats Claims 6-11 separately, these claims are separately patentable, because the above combination of prior art neither discloses nor suggests limitations of these claims.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1 and 5 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Indeed, the rejection is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that it be withdrawn.

The objection of Claim 9 is respectfully traversed. Indeed, the objection is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that it be withdrawn.

Applicants respectfully call the Examiner's attention to the Information Disclosure Statement (IDS) filed December 22, 2005. The Examiner is respectfully requested to initial the Form PTO 1449 submitted therewith, and include a copy thereof with the next Office communication.

Application No. 10/670,212
Reply to Office Action of November 14, 2005

All of the presently active claims in this application are now believed to be in immediate condition for allowance. The Examiner is respectfully requested to rejoin the non-elected method claims, and in the absence of further grounds of rejection, pass this application to issue with all pending claims.

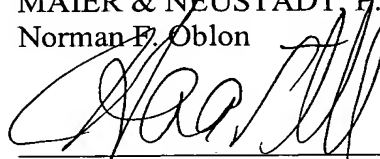
Respectfully submitted,

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Harris A. Pitlick
Registration No. 38,779

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